APPENDIX F

PHASE II ANALYTICAL RESULTS SUMMARY AND ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY RECORDS FOR GROUNDWATER SAMPLES

PHASE II FORWARD FLOW ANALYTICAL RESULTS
JET PROPULSION LABORATORY

	8/28/2002							8/30/2002							9/4/2002							9/6/2002						
SAMPLE LOCATION	**INF-1**	**INF-2**	**INF-3**	**EFF-4**	**EFF-5**	**EFF-6**	**EFF-7**	**INF-1**	**INF-2**	**INF-3**	**EFF-4**	**EFF-5**	**EFF-6**	**EFF-7**	**INF-1**	**INF-2**	**INF-3**	**EFF-4**	**EFF-5**	**EFF-6**	**EFF-7**	**INF-1**	**INF-2**	**INF-3**	**EFF-4**	**EFF-5**	**EFF-6**	**EFF-7**
ClO4-, mg/L	5.832	NA	NA	2.719	3.011	1.408	1.416	6	NA	NA	2.4	4.7	1.5	3.4	6.6	NA	NA	5.4	6.5	5.3	5.1	6.6	NA	NA	2.6	5.3	ND<0.964 (1)	4.7
NO3-, mg/L as Nitrate	48.4	NA	NA	15	16.7	5.28	0.62	48.4	NA	NA	9.2	30	0.87	15	45	NA	NA	ND<0.88	1	ND<0.88	ND<0.88	45	NA	NA	ND<0.88	28	ND<0.88	12
Acetate, mg/L	NA	410	180	600	210	620	210	NA	NA	NA	NA	NA	NA	NA	NA	110	60	21	26	46	ND<1	NA	160	35	130	ND<1.0	140	ND<1.0
Alkalinity as $CaCO_3$, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity as HCO3, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate as CO3, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

PHASE II FORWARD FLOW ANALYTICAL RESULTS
JET PROPULSION LABORATORY

	9/10/2002							9/13/2002							9/17/2002				10/2/2002							
SAMPLE LOCATION	**INF-1**	**INF-2**	**INF-3**	**EFF-4**	**EFF-5**	**EFF-6**	**EFF-7**	**INF-1**	**INF-2**	**INF-3**	**EFF-4**	**EFF-5**	**EFF-6**	**EFF-7**	**INF-1**	**INF-2**	**EFF-4**	**EFF-6**	**INF-1**	**INF-2**	**INF-3**	**EFF-4**	**EFF-5**	**EFF-6**	**EFF-7**	**EFF-8**
ClO4-, mg/L	ND<0.004	NA	NA	ND<0.004	ND<0.004	ND<0.004	ND<0.004	ND<0.004	NA	NA	ND<0.004	ND<0.004	ND<0.004	ND<0.004	ND<0.016	NA	ND<0.016	ND<0.016	8.3	NA	NA	5.2	4.4	5.1	3.5	ND<0.4
NO3-, mg/L as Nitrate	ND < 0.88	NA	NA	ND<0.88	ND<0.88	ND<0.88	ND<0.88	ND<0.88	NA	NA	ND<0.88	ND<0.88	ND<0.88	ND<0.88	0.8	NA	ND<0.44	ND<0.44	48	NA	NA	4.4	12	ND<0.88	5.3	ND<0.88
Acetate, mg/L	NA	600	500	510	510	590	530	NA	370	330	330	380	370	390	NA	130	NA	NA	NA	53	12	59	54	77	73	88
Alkalinity as $CaCO_3$, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity as HCO3, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate as CO3, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

PHASE II FORWARD FLOW ANALYTICAL RESULTS
JET PROPULSION LABORATORY

	10/4/2002								10/8/2002								10/10/2002							
SAMPLE LOCATION	**INF-1**	**INF-2**	**INF-3**	**EFF-4**	**EFF-5**	**EFF-6**	**EFF-7**	**EFF-8**	**INF-1**	**INF-2**	**INF-3**	**EFF-4**	**EFF-5**	**EFF-6**	**EFF-7**	**EFF-8**	**INF-1**	**INF-2**	**INF-3**	**EFF-4**	**EFF-5**	**EFF-6**	**EFF-7**	**EFF-8**
ClO4-, mg/L	8.9	NA	NA	3.6	2	2.4	ND<0.016	0.21	10.3	NA	NA	5	6.1	1.7	4.5	ND<0.016	10.6	NA	NA	2.3	2.1	0.42	0.49	ND<0.016
NO3-, mg/L as Nitrate	48	NA	NA	2.68	5.3	ND<0.44	ND<0.44	ND<0.44	48	NA	NA	7.9	5.7	ND<0.88	ND<0.88	ND<0.88	48	NA	NA	2.42	ND<0.88	ND<0.88	ND<0.88	ND<0.88
Acetate, mg/L	NA	22	ND<1	76	21	81	35	45	NA	14	11	ND<1	ND<1	ND<1	ND<1	ND<1	NA	40	40	ND<1	15	1.8	17	13
Alkalinity as $CaCO_3$, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity as HCO3, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbonate as CO3, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloride, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

PHASE II FORWARD FLOW ANALYTICAL RESULTS
JET PROPULSION LABORATORY

	10/14/2002								10/18/2002 (AM)								10/18/2002 (PM)							
SAMPLE LOCATION	**INF-1**	**INF-2**	**INF-3**	**EFF-4**	**EFF-5**	**EFF-6**	**EFF-7**	**EFF-8**	**INF-1**	**INF-2**	**INF-3**	**EFF-4**	**EFF-5**	**EFF-6**	**EFF-7**	**EFF-8**	**INF-1**	**INF-2**	**INF-3**	**EFF-4**	**EFF-5**	**EFF-6**	**EFF-7**	**EFF-8**
ClO4-, mg/L	9.2	NA	NA	2.2	2	0.54	ND<0.004	ND<0.004	9.7	NA	NA	2.9	1.8	0.62	0.12	0.077	9.2	NA	NA	2	2	0.9	0.38	ND<0.004
NO3-, mg/L as Nitrate	48	NA	NA	4.3	1.76	ND<0.88	ND<0.88	ND<0.88	48	NA	NA	ND<0.44	ND<0.44	ND<0.44	ND<0.44	ND<0.44	48	NA	NA	ND<0.44	ND<0.44	ND<0.44	ND<0.44	ND<0.44
Acetate, mg/L	NA	53	71	13	38	15	10	10	NA	95	44	86	60	110	86	105	78	78	ND<1	88	ND<1	83	43	61
Alkalinity as $CaCO_3$, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	121	NA	NA	262	251	276	260	276	115	NA	NA	263	226	263	232	250
Bicarbonate Alkalinity as HCO3, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	147	NA	NA	318	305	335	316	335	140	NA	NA	320	274	320	282	304
Carbonate as CO3, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	0.759	NA	NA	3.28	3.14	3.45	4.1	3.45	1.15	NA	NA	3.3	3.55	2.62	3.66	3.13
pH	NA	NA	NA	NA	NA	NA	NA	NA	7.9	NA	NA	8.2	8.2	8.2	8.3	8.2	8.1	NA	NA	8.2	8.3	8.1	8.3	8.2
Sulfate, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	43	NA	NA	51	55	51	54	53	42	NA	NA	53	52	53	53	55
Chloride, mg/L	NA	NA	NA	NA	NA	NA	NA	NA	33	NA	NA	41	43	42	43	43	32	NA	NA	43	42	43	43	44

NA - Not Analyzed
ND - Not Detected (Below Method Reporting Limit)
(1) Sample result from lab reanalysis 6 days after sample date. Sample result was 1.5 mg/L initially (sample was reanalyzed due to lab QC error).

For Sampling Dates: 8/28/2002 to 9/6/2002:

INF-1 - From Influent Equalization Tank
INF-2 - Influent into Reactor 1
INF-3 - Influent into Reactor 2
EFF-4 - Effluent from 1st Reactor 1 Tank
EFF-5 - Effluent from 1st Reactor 2 Tank
EFF-6 - Effluent from 2nd Reactor 1 Tank
EFF-7 - Effluent from 2nd Reactor 2 Tank

Reactor 2: 2 reactors with sponges impregnated with Celite; inoculated with JPL aquifer isolates
Reactor 1: 2 reactors with Hydroxyl F3R media; inoculated with JPL aquifer isolates
Flow rate about 5 gpm total, with flow rate
through R2 about 50% higher than R1

For Sampling Dates: 9/10 and 9/13
Both Reactors 1 and 2 on-line. In recirculation mode.

For Sampling Date: 9/17
Reactor 1 in recirculation mode;
Reactor 2 off-line (prep to inoculate with Perc1ase)

For Sampling Dates: 10/2/2002 to 10/18/2002:

Same Sample Port Designations as Above Apply, Except:
Add EFF-8 - Combined Effluent from both reactor systems

R1: 2 reactors with Hydroxyl F3R media (same as previous)
R2: 2 reactors with Hydroxyl F3R media; inoculated with Perc1ase
Flow Rate about 2 gpm total, with flow
rate ranging from 0.7 to 1.0 gpm through each reactor

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory Report

for

Foster Wheeler Environ. Inc.
1940 E Deere St, Ste 200

Santa Ana , CA 92705

Attention: David Tietje
Fax: 949 756-7560

DATE OF ISSUE

NOV 0 8 2002

MWH LABORATORIES

DPR Dennis Reyes
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac 01114CA

Report#: 101925
TREAT

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report,QC Summary,Data Report,Hits Report, totaling 10 page[s].

MWH Laboratories
MONTGOMERY WATSON HARZA

Quality Enviromental Analysis

November 08, 2002

Foster Wheeler Environmental Corp
1940 E Deere St, Ste 200
Santa Ana, CA 92705
949 756-7528

Attn: David Tietje

Dear Mr. Tietje:

Please find report #101925 for Nitrate, Chloride, Sulfate by EPA 300.0, Acetate by EPA 300.0 MOD, Alkalinity, Carbonate, Bicarbonate by EPA 310.1, and pH by EPA 150.1. The Nitrate analysis was not analyzed within the 48 hour holding time, due to an oversight in communication between log-in and analyst. Mr. Vitthal Hosangadi was informed on 10/21/02. We proceeded with the analysis for Nitrates as per instructions by Mr. Hosangadi.

If there are any questions about this report, please call me at (626) 568-6304.

Sincerely,

Dennis Reyes
Project Manager

Laboratory
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324

Southwest Service Center
15953 N. Greenway Hayden Loop
Suite C
Scottsdale, Arizona 85260
Tel: 480 778 1514
Fax: 480 948 2648

Nothern California Service Center
4320 Anthony Court
Suite 15
Rocklin, California 95677
Tel: 916 652 4556
Fax: 916 652 9571

MWH Laboratories
MONTGOMERY WATSON HARZA

CHAIN OF CUSTODY RECORD

101925

555 East Walnut Street
Pasadena, California 91101
Phone: (626) 568-6400
(800) 566-5227
Fax: (626) 568-6324

MWH LABS USE ONLY:

LOGIN COMMENTS: _____

SAMPLES CHECKED/LOGGED IN BY: _____

SAMPLE TEMP, RECEIPT AT LAB _____ (Compliance: 4 +/- 2*C)

SAMPLES RECEIVED DAY OF COLLECTION? ☐ (check for yes)

BLUE ICE: FROZEN ___ PARTIALLY FROZEN ___ THAWED ___

TO BE COMPLETED BY SAMPLER:

TAT requested: STD_____ 1 week _____ 3 day X 1 day _____

NON-COMPLIANCE SAMPLES ☐ (check for yes)
COMPLIANCE SAMPLES ☐
- Requires state forms

REGULATION: _____ (SDWA, Phase V, NPDES, FDA, ...)

COMPANY, UTILITY or PROJECT: FWENC

P.O.# / PROJECT JOB #: 2423.0003

REFER TO ATTACHED BOTTLE ORDER FOR ANALYSES ☐ (check for yes)

SAMPLER PRINTED NAME AND SIGNATURE: David Tietje

ANALYSES REQUIRED (mark an 'X' in all tests required for each sample line)

SAMPLE DATE	SAMPLE TIME	SITE NAME or LOCATION	IDENTIFIER or STATE ID #	MATRIX *	GRAB	COMP	ClO_4^-	NO_3^-	As	pH	Alk	Cl^-	SO_4^{2-}	SAMPLER COMMENTS
10/18	1543	JPL	FPBR14-INF-1	RGW	X		X	X		X	X	X	X	
10/18	1542	JPL	FPBR14-INF-2	RGW	X				X					
10/18	1541	JPL	FPBR14-INF-3	RGW	X				X					
10/18	1540	JPL	FPBR14-~~INF~~ EFF-4	GW	X		X	X	X	X	X	X	X	
10/18	1537	JPL	FPBR14-EFF-5	"	X		X	X	X	X	X	X	X	
10/18	1529	JPL	FPBR14-EFF-6	"	X		X	X	X	X	X	X	X	
10/18	1531	JPL	FPBR14-EFF-7	"	X		X	X	X	X	X	X	X	
10/18	1528	JPL	FPBR14-EFF-8	"	X		X	X	X	X	X	X	X	

* MATRIX TYPES:

Reported by Volume:

RSW = Raw Surface Water
RGW = Raw Ground Water
FW = Other Finished Water
CFW = Chlor(am)inated Finished Water
SW = Storm Water
WW = Other Waste Water
CWW = Chlorinated Waste Water

Reported by Weight:

SO = Soil
SL = Sludge

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:		Paul Tietje	Foster Wheeler	10/18/02	1715
RECEIVED BY:				10/18/02	17:15
RELINQUISHED BY:					
RECEIVED BY:					

C-O-C# _____

SCANNED

PAGE ____ OF ____

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory Hits Report #101925

Foster Wheeler Environ. Inc.
David Tietje
1940 E Deere St, Ste 200
Santa Ana , CA 92705

Samples Received
18-oct-2002 17:47:00

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2210190006	**JPL FPBR14-INF-1**			
10/22/02		Nitrate as NO3 by IC	48	mg/l	.880
10/22/02		Nitrate as Nitrogen by IC	11	mg/l	.200
10/21/02		Alkalinity in CaCO3 units	115	mg/l	1.000
10/23/02		Bicarb.Alkalinity as HCO3,calc	140.	mg/l	.001
10/23/02		Carbonate as CO3, Calculated	1.15	mg/l	.001
10/22/02		Chloride	32	mg/l	2.000
10/21/02		Lab pH	8.1	Units	.001
10/22/02		Perchlorate	9200	ug/l	******
10/22/02		Sulfate	42	mg/l	4.000
	2210190007	**JPL FPBR14-INF-2**			
11/06/02		Acetate	78	mg/l	10.000
	2210190008	**JPL FPBR14-INF-3**			
	2210190009	**JPL FPBR14-EFF-4**			
11/06/02		Acetate	88	mg/l	10.000
10/21/02		Alkalinity in CaCO3 units	263	mg/l	1.000
10/23/02		Bicarb.Alkalinity as HCO3,calc	320.	mg/l	.001
10/23/02		Carbonate as CO3, Calculated	3.30	mg/l	.001
10/22/02		Chloride	43	mg/l	1.000
10/21/02		Lab pH	8.2	Units	.001
10/22/02		Perchlorate	2000	ug/l	******
10/22/02		Sulfate	53	mg/l	2.000
	2210190010	**JPL FPBR14-EFF-5**			
10/21/02		Alkalinity in CaCO3 units	226	mg/l	1.000

SUMMARY OF POSITIVE DATA ONLY.

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory Hits Report #101925

Foster Wheeler Environ. Inc.
David Tietje
1940 E Deere St, Ste 200
Santa Ana , CA 92705

Samples Received
18-oct-2002 17:47:00

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2210190010	**JPL FPBR14-EFF-5**			
10/23/02		Bicarb.Alkalinity as HCO3,calc	274.	mg/l	.001
10/23/02		Carbonate as CO3, Calculated	3.55	mg/l	.001
10/22/02		Chloride	42	mg/l	1.000
10/21/02		Lab pH	8.3	Units	.001
10/22/02		Perchlorate	2000	ug/l	******
10/22/02		Sulfate	52	mg/l	2.000
	2210190011	**JPL FPBR14-EFF-6**			
11/06/02		Acetate	83	mg/l	10.000
10/21/02		Alkalinity in CaCO3 units	263	mg/l	1.000
10/23/02		Bicarb.Alkalinity as HCO3,calc	320.	mg/l	.001
10/23/02		Carbonate as CO3, Calculated	2.62	mg/l	.001
10/22/02		Chloride	43	mg/l	1.000
10/21/02		Lab pH	8.1	Units	.001
10/22/02		Perchlorate	900	ug/l	80.000
10/22/02		Sulfate	53	mg/l	2.000
	2210190012	**JPL FPBR14-EFF-7**			
11/06/02		Acetate	43	mg/l	10.000
10/21/02		Alkalinity in CaCO3 units	232	mg/l	1.000
10/23/02		Bicarb.Alkalinity as HCO3,calc	282.	mg/l	.001
10/23/02		Carbonate as CO3, Calculated	3.66	mg/l	.001
10/22/02		Chloride	43	mg/l	1.000
10/21/02		Lab pH	8.3	Units	.001
10/22/02		Perchlorate	380	ug/l	40.000
10/22/02		Sulfate	53	mg/l	2.000
	2210190013	**JPL FPBR14-EFF-8**			

SUMMARY OF POSITIVE DATA ONLY.

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
Hits Report
#101925

Foster Wheeler Environ. Inc.
David Tietje
1940 E Deere St, Ste 200
Santa Ana , CA 92705

Samples Received
18-oct-2002 17:47:00

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2210190013	JPL FPBR14-EFF-8			
11/06/02		Acetate	61	mg/l	10.000
10/21/02		Alkalinity in CaCO3 units	250	mg/l	1.000
10/23/02		Bicarb.Alkalinity as HCO3,calc	304.	mg/l	.001
10/23/02		Carbonate as CO3, Calculated	3.13	mg/l	.001
10/22/02		Chloride	44	mg/l	1.000
10/21/02		Lab pH	8.2	Units	.001
10/22/02		Sulfate	55	mg/l	2.000

SUMMARY OF POSITIVE DATA ONLY.

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
Data Report
#101925

Foster Wheeler Environ. Inc.
David Tietje
1940 E Deere St, Ste 200
Santa Ana , CA 92705

Samples Received
10/18/02

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
JPL FPBR14-INF-1 (2210190006) Sampled on 10/18/02 15:43								
	10/21/02 00:00	183664	(SM2320B/E310.1)	Alkalinity in CaCO3 units	115	mg/l	1.0	1
	10/22/02 14:09	184023	(ML/EPA 300)	Chloride	32	mg/l	2.0	2
	10/22/02 00:00	183791	(CADHS/EPA314)	Perchlorate	9200	ug/l	1600	400
	10/23/02 06:58		(SM2320B/E310.1)	Carbonate as CO3, Calculated	1.15	mg/l	0.0010	1
	10/23/02 06:54		(SM2320B/E310.1)	Bicarb.Alkalinity as HCO3,calc	140.	mg/l	0.0010	1
	10/21/02 00:00	183541	(S4500HB/E150.1)	Lab pH	8.1	Units	0.0010	1
	10/22/02 14:09	184026	(ML/EPA 300.0)	Sulfate	42	mg/l	4.0	2
				Nitrate by IC as NO3 & N				
	10/22/02 00:00	184205	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	11	mg/l	0.20	2
	10/22/02 00:00	184205	(ML/EPA 300.0)	Nitrate as NO3 by IC	48	mg/l	0.88	2
JPL FPBR14-INF-2 (2210190007) Sampled on 10/18/02 15:42								
	11/06/02 00:00		(EPA 300 MOD)	Acetate	78	mg/l	10	10
JPL FPBR14-INF-3 (2210190008) Sampled on 10/18/02 15:41								
	11/06/02 00:00		(EPA 300 MOD)	Acetate	ND	mg/l	1.0	1
JPL FPBR14-EFF-4 (2210190009) Sampled on 10/18/02 15:40								
	11/06/02 00:00		(EPA 300 MOD)	Acetate	88	mg/l	10	10
	10/21/02 00:00	183664	(SM2320B/E310.1)	Alkalinity in CaCO3 units	263	mg/l	1.0	1
	10/22/02 14:20	184023	(ML/EPA 300)	Chloride	43	mg/l	1.0	1
	10/22/02 00:00	183791	(CADHS/EPA314)	Perchlorate	2000	ug/l	400	100
	10/23/02 06:58		(SM2320B/E310.1)	Carbonate as CO3, Calculated	3.30	mg/l	0.0010	1
	10/23/02 06:54		(SM2320B/E310.1)	Bicarb.Alkalinity as HCO3,calc	320.	mg/l	0.0010	1
	10/21/02 00:00	183541	(S4500HB/E150.1)	Lab pH	8.2	Units	0.0010	1
	10/22/02 14:20	184026	(ML/EPA 300.0)	Sulfate	53	mg/l	2.0	1
				Nitrate by IC as NO3 & N				
	10/22/02 00:00	184205	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	ND	mg/l	0.10	1
	10/22/02 00:00	184205	(ML/EPA 300.0)	Nitrate as NO3 by IC	ND	mg/l	0.44	1

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
Data Report
#101925

Foster Wheeler Environ. Inc.
(continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
JPL FPBR14-EFF-5 (2210190010) Sampled on 10/18/02 15:37								
	11/06/02 00:00		(EPA 300 MOD)	Acetate	ND	mg/l	1.0	1
	10/21/02 00:00	183664	(SM2320B/E310.1)	Alkalinity in CaCO3 units	226	mg/l	1.0	1
	10/22/02 14:31	184023	(ML/EPA 300)	Chloride	42	mg/l	1.0	1
	10/22/02 00:00	183791	(CADHS/EPA314)	Perchlorate	2000	ug/l	200	50
	10/23/02 06:58		(SM2320B/E310.1)	Carbonate as CO3, Calculated	3.55	mg/l	0.0010	1
	10/23/02 06:54		(SM2320B/E310.1)	Bicarb.Alkalinity as HCO3,calc	274.	mg/l	0.0010	1
	10/21/02 00:00	183541	(S4500HB/E150.1)	Lab pH	8.3	Units	0.0010	1
	10/22/02 14:31	184026	(ML/EPA 300.0)	Sulfate	52	mg/l	2.0	1
Nitrate by IC as NO3 & N								
	10/22/02 00:00	184205	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	ND	mg/l	0.10	1
	10/22/02 00:00	184205	(ML/EPA 300.0)	Nitrate as NO3 by IC	ND	mg/l	0.44	1
JPL FPBR14-EFF-6 (2210190011) Sampled on 10/18/02 15:24								
	11/06/02 00:00		(EPA 300 MOD)	Acetate	83	mg/l	10	10
	10/21/02 00:00	183664	(SM2320B/E310.1)	Alkalinity in CaCO3 units	263	mg/l	1.0	1
	10/22/02 14:41	184023	(ML/EPA 300)	Chloride	43	mg/l	1.0	1
	10/22/02 00:00	183791	(CADHS/EPA314)	Perchlorate	900	ug/l	80	20
	10/23/02 06:58		(SM2320B/E310.1)	Carbonate as CO3, Calculated	2.62	mg/l	0.0010	1
	10/23/02 06:54		(SM2320B/E310.1)	Bicarb.Alkalinity as HCO3,calc	320.	mg/l	0.0010	1
	10/21/02 00:00	183543	(S4500HB/E150.1)	Lab pH	8.1	Units	0.0010	1
	10/22/02 14:41	184026	(ML/EPA 300.0)	Sulfate	53	mg/l	2.0	1
Nitrate by IC as NO3 & N								
	10/22/02 00:00	184205	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	ND	mg/l	0.10	1
	10/22/02 00:00	184205	(ML/EPA 300.0)	Nitrate as NO3 by IC	ND	mg/l	0.44	1
JPL FPBR14-EFF-7 (2210190012) Sampled on 10/18/02 15:31								
	11/06/02 00:00		(EPA 300 MOD)	Acetate	43	mg/l	10	10
	10/21/02 00:00	183664	(SM2320B/E310.1)	Alkalinity in CaCO3 units	232	mg/l	1.0	1
	10/22/02 14:52	184023	(ML/EPA 300)	Chloride	43	mg/l	1.0	1
	10/22/02 00:00	183791	(CADHS/EPA314)	Perchlorate	380	ug/l	40	10
	10/23/02 06:58		(SM2320B/E310.1)	Carbonate as CO3, Calculated	3.66	mg/l	0.0010	1
	10/23/02 06:54		(SM2320B/E310.1)	Bicarb.Alkalinity as HCO3,calc	282.	mg/l	0.0010	1

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
Data Report
#101925

Foster Wheeler Environ. Inc.
(continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
	10/21/02 00:00	183543	(S4500HB/E150.1)	Lab pH	8.3	Units	0.0010	1
	10/22/02 14:52	184026	(ML/EPA 300.0)	Sulfate	53	mg/l	2.0	1
				Nitrate by IC as NO3 & N				
	10/22/02 00:00	184205	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	ND	mg/l	0.10	1
	10/22/02 00:00	184205	(ML/EPA 300.0)	Nitrate as NO3 by IC	ND	mg/l	0.44	1
JPL FPBR14-EFF-8 (2210190013)				**Sampled on 10/18/02 15:28**				
	11/06/02 00:00		(EPA 300 MOD)	Acetate	61	mg/l	10	10
	10/21/02 00:00	183664	(SM2320B/E310.1)	Alkalinity in CaCO3 units	250	mg/l	1.0	1
	10/22/02 15:24	184023	(ML/EPA 300)	Chloride	44	mg/l	1.0	1
	10/22/02 00:00	183791	(CADHS/EPA314)	Perchlorate	ND	ug/l	4.0	1
	10/23/02 06:58		(SM2320B/E310.1)	Carbonate as CO3, Calculated	3.13	mg/l	0.0010	1
	10/23/02 06:54		(SM2320B/E310.1)	Bicarb.Alkalinity as HCO3,calc	304.	mg/l	0.0010	1
	10/21/02 00:00	183543	(S4500HB/E150.1)	Lab pH	8.2	Units	0.0010	1
	10/22/02 15:24	184026	(ML/EPA 300.0)	Sulfate	55	mg/l	2.0	1
				Nitrate by IC as NO3 & N				
	10/22/02 00:00	184205	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	ND	mg/l	0.10	1
	10/22/02 00:00	184205	(ML/EPA 300.0)	Nitrate as NO3 by IC	ND	mg/l	0.44	1

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
QC Summary
#101925

Foster Wheeler Environ. Inc.

QC Ref #183541 - Lab pH **Analysis Date: 10/21/2002**

2210190006	JPL FPBR14-INF-1
2210190009	JPL FPBR14-EFF-4
2210190010	JPL FPBR14-EFF-5

QC Ref #183543 - Lab pH **Analysis Date: 10/21/2002**

2210190011	JPL FPBR14-EFF-6
2210190012	JPL FPBR14-EFF-7
2210190013	JPL FPBR14-EFF-8

QC Ref #183664 - Alkalinity in CaCO3 units **Analysis Date: 10/21/2002**

2210190006	JPL FPBR14-INF-1
2210190009	JPL FPBR14-EFF-4
2210190010	JPL FPBR14-EFF-5
2210190011	JPL FPBR14-EFF-6
2210190012	JPL FPBR14-EFF-7
2210190013	JPL FPBR14-EFF-8

QC Ref #183791 - Perchlorate **Analysis Date: 10/22/2002**

2210190006	JPL FPBR14-INF-1
2210190009	JPL FPBR14-EFF-4
2210190010	JPL FPBR14-EFF-5
2210190011	JPL FPBR14-EFF-6
2210190012	JPL FPBR14-EFF-7
2210190013	JPL FPBR14-EFF-8

QC Ref #184023 - Chloride **Analysis Date: 10/22/2002**

2210190006	JPL FPBR14-INF-1
2210190009	JPL FPBR14-EFF-4
2210190010	JPL FPBR14-EFF-5
2210190011	JPL FPBR14-EFF-6
2210190012	JPL FPBR14-EFF-7
2210190013	JPL FPBR14-EFF-8

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
QC Summary
#101925

Foster Wheeler Environ. Inc.
(continued)

QC Ref #184026 - Sulfate **Analysis Date: 10/22/2002**

2210190006	JPL FPBR14-INF-1
2210190009	JPL FPBR14-EFF-4
2210190010	JPL FPBR14-EFF-5
2210190011	JPL FPBR14-EFF-6
2210190012	JPL FPBR14-EFF-7
2210190013	JPL FPBR14-EFF-8

QC Ref #184205 - Nitrate by IC as NO3 & N **Analysis Date: 10/22/2002**

2210190006	JPL FPBR14-INF-1
2210190009	JPL FPBR14-EFF-4
2210190010	JPL FPBR14-EFF-5
2210190011	JPL FPBR14-EFF-6
2210190012	JPL FPBR14-EFF-7
2210190013	JPL FPBR14-EFF-8

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
QC Report
#101925

Foster Wheeler Environ. Inc.

QC Ref #183541 Lab pH

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
DUP	Lab pH	8.4	8.4	UNIT		(0-20)	0.0

QC Ref #183543 Lab pH

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
DUP	Lab pH	8.2	8.2	UNIT		(0-20)	0.0

QC Ref #183664 Alkalinity in CaCO3 units

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	10180004	MGL		(0-0)	
LCS1	Alkalinity in CaCO3 units	100	99.8	MGL	99.8	(90-110)	
LCS2	Alkalinity in CaCO3 units	100	104	MGL	104.0	(90-110)	4.1
MBLK	Alkalinity in CaCO3 units	ND	<1.00	MGL			
MS	Alkalinity in CaCO3 units	96.2	93.2	MGL	96.9	(80-120)	
MSD	Alkalinity in CaCO3 units	96.2	95.5	MGL	99.3	(80-120)	2.4
RPD_LCS	Alkalinity in CaCO3 units	99.800	104.000	MGL	4.1	(0-10)	
RPD_MS	Alkalinity in CaCO3 units	96.881	99.272	MGL	2.4	(0-10)	

QC Ref #183791 Perchlorate

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	10080119	UGL		(0-0)	
LCS1	Perchlorate	25.0	23.4	UGL	93.6	(85-115)	
LCS2	Perchlorate	25.0	24.8	UGL	99.2	(85-115)	5.8
MBLK	Perchlorate	ND	<4.00	UGL			
MS	Perchlorate	25.0	24.1	UGL	96.4	(80-120)	
MSD	Perchlorate	25.0	25.0	UGL	100.0	(80-120)	3.7

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
QC Report
#101925

Foster Wheeler Environ. Inc.
(continued)

QC Ref #184023 Chloride

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Chloride	25	25.3	MGL	101.2	(90-110)	
LCS2	Chloride	25	25.2	MGL	100.8	(90-110)	0.40
MBLK	Chloride	ND	<1.00	MGL			
MS	Chloride	25	26.2	MGL	104.8	(80-120)	
MSD	Chloride	25	26.2	MGL	104.8	(80-120)	0.00

QC Ref #184026 Sulfate

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Sulfate	50	50.9	MGL	101.8	(90-110)	
LCS2	Sulfate	50	50.6	MGL	101.2	(90-110)	0.59
MBLK	Sulfate	ND	<2.00	MGL			
MS	Sulfate	50	50.8	MGL	101.6	(80-120)	
MSD	Sulfate	50	50.8	MGL	101.6	(80-120)	0.00

QC Ref #184205 Nitrate by IC as NO3 & N

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	10190013	NONE		(0-0)	
LCS1	Nitrate-N	2.5	2.6	MGL	104.0	(90-110)	
LCS2	Nitrate-N	2.5	2.6	MGL	104.0	(90-110)	0.00
MS	Nitrate-N	2.5	2.6	MGL	104.0	(90-110)	
MSD	Nitrate-N	2.5	2.6	MGL	104.0	(90-110)	0.00
MBLK	Nitrate as NO3 by IC	ND	<0.44	MGL			

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory Report

for

Foster Wheeler Environ. Inc.
1940 E Deere St, Ste 200

Santa Ana , CA 92705

Attention: David Tietje
Fax: 949 756-7560

DATE OF ISSUE
NOV 0 8 2002
MWH LABORATORIES

DPR Dennis Reyes
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac 01114CA

Report#: 101920
TREAT

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are QC Report,QC Summary,Data Report,Hits Report, totaling 11 page[s].

MWH Laboratories
MONTGOMERY WATSON HARZA

CHAIN OF CUSTODY RECORD

101920

555 East Walnut Street
Pasadena, California 91101
Phone: (626) 568-6400
(800) 566-5227
Fax: (626) 568-6324

MWH LABS USE ONLY:

LOGIN COMMENTS: _____

SAMPLES CHECKED/LOGGED IN BY: J-S

SAMPLE TEMP, RECEIPT AT LAB _____ (Compliance: 4 +/- 2*C)

SAMPLES RECEIVED DAY OF COLLECTION? [X] (check for yes)

BLUE ICE: FROZEN ~ PARTIALLY FROZEN ___ THAWED ___

TO BE COMPLETED BY SAMPLER:

TAT requested: STD_____ 1 week _____ 3 day X 1 day _____

NON-COMPLIANCE SAMPLES [ ] (check for yes)
COMPLIANCE SAMPLES [ ]
- Requires state forms

REGULATION: _____ (SDWA, Phase V, NPDES, FDA, ...)

COMPANY, UTILITY or PROJECT: FWENC

P.O.# / PROJECT JOB #: 2423.0003

REFER TO ATTACHED BOTTLE ORDER FOR ANALYSES [ ] (check for yes)

SAMPLER PRINTED NAME AND SIGNATURE: David Tietje

ANALYSES REQUIRED (mark an 'X' in all tests required for each sample line)

SAMPLE DATE	SAMPLE TIME	SITE NAME or LOCATION	IDENTIFIER or STATE ID #	MATRIX *	GRAB	COMP	ClO_4^-	NO_3^-	Ac^-	pH	Alk	Cl^-	SO_4^{2-}	SAMPLER COMMENTS
10/18	1043	JPL	FPBR13 - INF-1	RGW	X		X	X		X	X	X	X	
10/18	1039	JPL	FPBR13 - INF-2	RGW	X				X					
10/18	1040	JPL	FPBR13 - INF-3	RGW	X				X					
10/18	1036	JPL	FPBR13 - EFF-4	GW	X		X	X	X	X	X	X	X	
10/18	1033	JPL	FPBR13 - EFF-5	GW	X		X	X	X	X	X	X	X	
10/18	1033	JPL	FPBR13 - EFF-6	GW	X		X	X	X	X	X	X	X	
10/18	1027	JPL	FPBR13 - EFF-7	GW	X		X	X	X	X	X	X	X	
10/18	1025	JPL	FPBR13 - EFF-8	GW	X		X	X	X	X	X	X	X	
			D Tietje 10/18/02											

* **MATRIX TYPES:**

Reported by Volume:

RSW = Raw Surface Water
RGW = Raw Ground Water
FW = Other Finished Water
CFW = Chlor(am)inated Finished Water
SW = Storm Water
WW = Other Waste Water
CWW = Chlorinated Waste Water

Reported by Weight:

SO = Soil
SL = Sludge

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:	D Tietje	David Tietje	Foster Wheeler / Engineer	10/18/02	11:15
RECEIVED BY:				10/18/02	11:15
RELINQUISHED BY:					
RECEIVED BY:					

SCANNED

C-O-C# _____

PAGE 1 OF 1

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory Hits Report #101920

Foster Wheeler Environ. Inc.
David Tietje
1940 E Deere St, Ste 200
Santa Ana , CA 92705

Samples Received
18-oct-2002 14:53:12

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2210180091	**FPBR13-INF-1**			
10/18/02		Nitrate as NO3 by IC	48	mg/l	.880
10/18/02		Nitrate as Nitrogen by IC	11	mg/l	.200
10/21/02		Alkalinity in CaCO3 units	121	mg/l	1.000
10/23/02		Bicarb.Alkalinity as HCO3,calc	147.	mg/l	.001
10/23/02		Carbonate as CO3, Calculated	0.759	mg/l	.001
10/18/02		Chloride	33	mg/l	2.000
10/21/02		Lab pH	7.9	Units	.001
10/18/02		Perchlorate	9700	ug/l	******
10/18/02		Sulfate	43	mg/l	4.000
	2210180092	**FPBR13-INF-2**			
11/06/02		Acetate	95	mg/l	10.000
	2210180093	**FPBR13-INF-3**			
11/06/02		Acetate	44	mg/l	10.000
	2210180094	**FPBR13-EFF-4**			
11/06/02		Acetate	86	mg/l	10.000
10/21/02		Alkalinity in CaCO3 units	262	mg/l	1.000
10/23/02		Bicarb.Alkalinity as HCO3,calc	318.	mg/l	.001
10/23/02		Carbonate as CO3, Calculated	3.28	mg/l	.001
10/18/02		Chloride	41	mg/l	1.000
10/21/02		Lab pH	8.2	Units	.001
10/19/02		Perchlorate	2900	ug/l	******
10/18/02		Sulfate	51	mg/l	2.000
	2210180095	**FPBR13-EFF-5**			

SUMMARY OF POSITIVE DATA ONLY.

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory Hits Report #101920

Foster Wheeler Environ. Inc.
David Tietje
1940 E Deere St, Ste 200
Santa Ana , CA 92705

Samples Received
18-oct-2002 14:53:12

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2210180095	**FPBR13-EFF-5**			
10/18/02		Nitrate as NO3 by IC	1.36	mg/l	.440
10/18/02		Nitrate as Nitrogen by IC	0.31	mg/l	.100
11/06/02		Acetate	60	mg/l	10.000
10/21/02		Alkalinity in CaCO3 units	251	mg/l	1.000
10/23/02		Bicarb.Alkalinity as HCO3,calc	305.	mg/l	.001
10/23/02		Carbonate as CO3, Calculated	3.14	mg/l	.001
10/18/02		Chloride	43	mg/l	1.000
10/21/02		Lab pH	8.2	Units	.001
10/19/02		Perchlorate	1800	ug/l	******
10/18/02		Sulfate	55	mg/l	2.000
	2210180096	**FPBR13-EFF-6**			
11/06/02		Acetate	110	mg/l	10.000
10/21/02		Alkalinity in CaCO3 units	276	mg/l	1.000
10/23/02		Bicarb.Alkalinity as HCO3,calc	335.	mg/l	.001
10/23/02		Carbonate as CO3, Calculated	3.45	mg/l	.001
10/18/02		Chloride	42	mg/l	1.000
10/21/02		Lab pH	8.2	Units	.001
10/19/02		Perchlorate	620	ug/l	80.000
10/18/02		Sulfate	51	mg/l	2.000
	2210180097	**FPBR13-EFF-7**			
11/06/02		Acetate	86	mg/l	10.000
10/21/02		Alkalinity in CaCO3 units	260	mg/l	1.000
10/23/02		Bicarb.Alkalinity as HCO3,calc	316.	mg/l	.001
10/23/02		Carbonate as CO3, Calculated	4.10	mg/l	.001
10/18/02		Chloride	43	mg/l	1.000
10/21/02		Lab pH	8.3	Units	.001
10/19/02		Perchlorate	120	ug/l	40.000

SUMMARY OF POSITIVE DATA ONLY.

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
Hits Report
#101920

Foster Wheeler Environ. Inc.
David Tietje
1940 E Deere St, Ste 200
Santa Ana , CA 92705

Samples Received
18-oct-2002 14:53:12

Analyzed	Sample#	Sample ID	Result	UNITS	MRL
	2210180097	**FPBR13-EFF-7**			
10/18/02	Sulfate		54	mg/l	2.000
	2210180098	**FPBR13-EFF-8**			
11/06/02	Acetate		105	mg/l	10.000
10/21/02	Alkalinity in CaCO3 units		276	mg/l	1.000
10/23/02	Bicarb.Alkalinity as HCO3,calc		335.	mg/l	.001
10/23/02	Carbonate as CO3, Calculated		3.45	mg/l	.001
10/18/02	Chloride		43	mg/l	1.000
10/21/02	Lab pH		8.2	Units	.001
10/18/02	Perchlorate		77	ug/l	16.000
10/18/02	Sulfate		53	mg/l	2.000

SUMMARY OF POSITIVE DATA ONLY.

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
Data Report
#101920

Foster Wheeler Environ. Inc.
David Tietje
1940 E Deere St, Ste 200
Santa Ana , CA 92705

Samples Received
10/18/02

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
FPBR13-INF-1 (2210180091) Sampled on 10/18/02 10:43								
	10/21/02 00:00	183664	(SM2320B/E310.1)	Alkalinity in CaCO3 units	121	mg/l	1.0	1
	10/18/02 15:18	183487	(ML/EPA 300)	Chloride	33	mg/l	2.0	2
	10/18/02 00:00	183539	(CADHS/EPA314)	Perchlorate	9700	ug/l	1600	400
	10/23/02 06:58		(SM2320B/E310.1)	Carbonate as CO3, Calculated	0.759	mg/l	0.0010	1
	10/23/02 06:54		(SM2320B/E310.1)	Bicarb.Alkalinity as HCO3,calc	147.	mg/l	0.0010	1
	10/21/02 00:00	183541	(S4500HB/E150.1)	Lab pH	7.9	Units	0.0010	1
	10/18/02 15:18	183490	(ML/EPA 300.0)	Sulfate	43	mg/l	4.0	2
				Nitrate by IC as NO3 & N				
	10/18/02 00:00	183500	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	11	mg/l	0.20	2
	10/18/02 00:00	183500	(ML/EPA 300.0)	Nitrate as NO3 by IC	48	mg/l	0.88	2
FPBR13-INF-2 (2210180092) Sampled on 10/18/02 10:39								
	11/06/02 00:00		(EPA 300 MOD)	Acetate	95	mg/l	10	10
FPBR13-INF-3 (2210180093) Sampled on 10/18/02 10:40								
	11/06/02 00:00		(EPA 300 MOD)	Acetate	44	mg/l	10	10
FPBR13-EFF-4 (2210180094) Sampled on 10/18/02 10:36								
	11/06/02 00:00		(EPA 300 MOD)	Acetate	86	mg/l	10	10
	10/21/02 00:00	183664	(SM2320B/E310.1)	Alkalinity in CaCO3 units	262	mg/l	1.0	1
	10/18/02 15:29	183487	(ML/EPA 300)	Chloride	41	mg/l	1.0	1
	10/19/02 00:00	183610	(CADHS/EPA314)	Perchlorate	2900	ug/l	400	100
	10/23/02 06:58		(SM2320B/E310.1)	Carbonate as CO3, Calculated	3.28	mg/l	0.0010	1
	10/23/02 06:54		(SM2320B/E310.1)	Bicarb.Alkalinity as HCO3,calc	318.	mg/l	0.0010	1
	10/21/02 00:00	183541	(S4500HB/E150.1)	Lab pH	8.2	Units	0.0010	1
	10/18/02 15:29	183490	(ML/EPA 300.0)	Sulfate	51	mg/l	2.0	1
				Nitrate by IC as NO3 & N				
	10/18/02 00:00	183500	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	ND	mg/l	0.10	1
	10/18/02 00:00	183500	(ML/EPA 300.0)	Nitrate as NO3 by IC	ND	mg/l	0.44	1

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
Data Report
#101920

Foster Wheeler Environ. Inc.
(continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
FPBR13-EFF-5 (2210180095) Sampled on 10/18/02 10:33								
	11/06/02 00:00		(EPA 300 MOD)	Acetate	60	mg/l	10	10
	10/21/02 00:00	183664	(SM2320B/E310.1)	Alkalinity in CaCO3 units	251	mg/l	1.0	1
	10/18/02 15:39	183487	(ML/EPA 300)	Chloride	43	mg/l	1.0	1
	10/19/02 00:00	183610	(CADHS/EPA314)	Perchlorate	1800	ug/l	200	50
	10/23/02 06:58		(SM2320B/E310.1)	Carbonate as CO3, Calculated	3.14	mg/l	0.0010	1
	10/23/02 06:54		(SM2320B/E310.1)	Bicarb.Alkalinity as HCO3,calc	305.	mg/l	0.0010	1
	10/21/02 00:00	183541	(S4500HB/E150.1)	Lab pH	8.2	Units	0.0010	1
	10/18/02 15:39	183490	(ML/EPA 300.0)	Sulfate	55	mg/l	2.0	1
Nitrate by IC as NO3 & N								
	10/18/02 00:00	183500	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	0.31	mg/l	0.10	1
	10/18/02 00:00	183500	(ML/EPA 300.0)	Nitrate as NO3 by IC	1.36	mg/l	0.44	1
FPBR13-EFF-6 (2210180096) Sampled on 10/18/02 10:33								
	11/06/02 00:00		(EPA 300 MOD)	Acetate	110	mg/l	10	10
	10/21/02 00:00	183664	(SM2320B/E310.1)	Alkalinity in CaCO3 units	276	mg/l	1.0	1
	10/18/02 15:50	183487	(ML/EPA 300)	Chloride	42	mg/l	1.0	1
	10/19/02 00:00	183610	(CADHS/EPA314)	Perchlorate	620	ug/l	80	20
	10/23/02 06:58		(SM2320B/E310.1)	Carbonate as CO3, Calculated	3.45	mg/l	0.0010	1
	10/23/02 06:54		(SM2320B/E310.1)	Bicarb.Alkalinity as HCO3,calc	335.	mg/l	0.0010	1
	10/21/02 00:00	183541	(S4500HB/E150.1)	Lab pH	8.2	Units	0.0010	1
	10/18/02 15:50	183490	(ML/EPA 300.0)	Sulfate	51	mg/l	2.0	1
Nitrate by IC as NO3 & N								
	10/18/02 00:00	183500	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	ND	mg/l	0.10	1
	10/18/02 00:00	183500	(ML/EPA 300.0)	Nitrate as NO3 by IC	ND	mg/l	0.44	1
FPBR13-EFF-7 (2210180097) Sampled on 10/18/02 10:27								
	11/06/02 00:00		(EPA 300 MOD)	Acetate	86	mg/l	10	10
	10/21/02 00:00	183664	(SM2320B/E310.1)	Alkalinity in CaCO3 units	260	mg/l	1.0	1
	10/18/02 16:00	183487	(ML/EPA 300)	Chloride	43	mg/l	1.0	1
	10/19/02 00:00	183610	(CADHS/EPA314)	Perchlorate	120	ug/l	40	10
	10/23/02 06:58		(SM2320B/E310.1)	Carbonate as CO3, Calculated	4.10	mg/l	0.0010	1
	10/23/02 06:54		(SM2320B/E310.1)	Bicarb.Alkalinity as HCO3,calc	316.	mg/l	0.0010	1

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
Data Report
#101920

Foster Wheeler Environ. Inc.
(continued)

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
	10/21/02 00:00	183541	(S4500HB/E150.1)	Lab pH	8.3	Units	0.0010	1
	10/18/02 16:00	183490	(ML/EPA 300.0)	Sulfate	54	mg/l	2.0	1
				Nitrate by IC as NO3 & N				
	10/18/02 00:00	183500	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	ND	mg/l	0.10	1
	10/18/02 00:00	183500	(ML/EPA 300.0)	Nitrate as NO3 by IC	ND	mg/l	0.44	1
FPBR13-EFF-8 (2210180098)				**Sampled on 10/18/02 10:25**				
	11/06/02 00:00		(EPA 300 MOD)	Acetate	105	mg/l	10	10
	10/21/02 00:00	183664	(SM2320B/E310.1)	Alkalinity in CaCO3 units	276	mg/l	1.0	1
	10/18/02 16:11	183487	(ML/EPA 300)	Chloride	43	mg/l	1.0	1
	10/18/02 00:00	183539	(CADHS/EPA314)	Perchlorate	77	ug/l	16	4
	10/23/02 06:58		(SM2320B/E310.1)	Carbonate as CO3, Calculated	3.45	mg/l	0.0010	1
	10/23/02 06:54		(SM2320B/E310.1)	Bicarb.Alkalinity as HCO3,calc	335.	mg/l	0.0010	1
	10/21/02 00:00	183541	(S4500HB/E150.1)	Lab pH	8.2	Units	0.0010	1
	10/18/02 16:11	183490	(ML/EPA 300.0)	Sulfate	53	mg/l	2.0	1
				Nitrate by IC as NO3 & N				
	10/18/02 00:00	183500	(ML/EPA 300.0)	Nitrate as Nitrogen by IC	ND	mg/l	0.10	1
	10/18/02 00:00	183500	(ML/EPA 300.0)	Nitrate as NO3 by IC	ND	mg/l	0.44	1

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
QC Summary
#101920

Foster Wheeler Environ. Inc.

QC Ref #183487 - Chloride **Analysis Date: 10/18/2002**

2210180091	FPBR13-INF-1
2210180094	FPBR13-EFF-4
2210180095	FPBR13-EFF-5
2210180096	FPBR13-EFF-6
2210180097	FPBR13-EFF-7
2210180098	FPBR13-EFF-8

QC Ref #183490 - Sulfate **Analysis Date: 10/18/2002**

2210180091	FPBR13-INF-1
2210180094	FPBR13-EFF-4
2210180095	FPBR13-EFF-5
2210180096	FPBR13-EFF-6
2210180097	FPBR13-EFF-7
2210180098	FPBR13-EFF-8

QC Ref #183500 - Nitrate by IC as NO3 & N **Analysis Date: 10/18/2002**

2210180091	FPBR13-INF-1
2210180094	FPBR13-EFF-4
2210180095	FPBR13-EFF-5
2210180096	FPBR13-EFF-6
2210180097	FPBR13-EFF-7
2210180098	FPBR13-EFF-8

QC Ref #183539 - Perchlorate **Analysis Date: 10/18/2002**

2210180091	FPBR13-INF-1
2210180098	FPBR13-EFF-8

QC Ref #183541 - Lab pH **Analysis Date: 10/21/2002**

2210180091	FPBR13-INF-1
2210180094	FPBR13-EFF-4
2210180095	FPBR13-EFF-5
2210180096	FPBR13-EFF-6
2210180097	FPBR13-EFF-7
2210180098	FPBR13-EFF-8

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
QC Summary
#101920

Foster Wheeler Environ. Inc.
(continued)

QC Ref #183610 - Perchlorate **Analysis Date: 10/19/2002**

2210180094	FPBR13-EFF-4
2210180095	FPBR13-EFF-5
2210180096	FPBR13-EFF-6
2210180097	FPBR13-EFF-7

QC Ref #183664 - Alkalinity in CaCO3 units **Analysis Date: 10/21/2002**

2210180091	FPBR13-INF-1
2210180094	FPBR13-EFF-4
2210180095	FPBR13-EFF-5
2210180096	FPBR13-EFF-6
2210180097	FPBR13-EFF-7
2210180098	FPBR13-EFF-8

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
QC Report
#101920

Foster Wheeler Environ. Inc.

QC Ref #183487 Chloride

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Chloride	25	25.6	MGL	102.4	(90-110)	
LCS2	Chloride	25	25.6	MGL	102.4	(90-110)	0.00
MBLK	Chloride	ND	<1.00	MGL			
MS	Chloride	25	25.5	MGL	102.0	(80-120)	
MSD	Chloride	25	26.4	MGL	105.6	(80-120)	3.5

QC Ref #183490 Sulfate

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
LCS1	Sulfate	50	51.2	MGL	102.4	(90-110)	
LCS2	Sulfate	50	51.4	MGL	102.8	(90-110)	0.39
MBLK	Sulfate	ND	<2.00	MGL			
MS	Sulfate	50	55.9	MGL	111.8	(80-120)	
MSD	Sulfate	50	56.3	MGL	112.6	(80-120)	0.71

QC Ref #183500 Nitrate by IC as NO3 & N

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	10180004	NONE		(0-0)	
LCS1	Nitrate-N	2.5	2.63	MGL	105.2	(90-110)	
LCS2	Nitrate-N	2.5	2.66	MGL	106.4	(90-110)	1.1
MS	Nitrate-N	2.5	2.61	MGL	104.4	(90-110)	
MSD	Nitrate-N	2.5	2.65	MGL	106.0	(90-110)	1.5
MBLK	Nitrate as NO3 by IC	ND	<0.44	MGL			

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
QC Report
#101920

Foster Wheeler Environ. Inc.
(continued)

QC Ref #183539 Perchlorate

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	10040067	UGL		(0-0)	
LCS1	Perchlorate	25.0	23.8	UGL	95.2	(85-115)	
LCS2	Perchlorate	25.0	23.7	UGL	94.8	(85-115)	0.42
MBLK	Perchlorate	ND	<4.00	UGL			
MS	Perchlorate	25.0	26.3	UGL	105.2	(80-120)	
MSD	Perchlorate	25.0	26.9	UGL	107.6	(80-120)	2.3

QC Ref #183541 Lab pH

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
DUP	Lab pH	8.4	8.4	UNIT		(0-20)	0.0

QC Ref #183610 Perchlorate

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	10040159	UGL		(0-0)	
LCS1	Perchlorate	25.0	24.0	UGL	96.0	(85-115)	
LCS2	Perchlorate	25.0	24.1	UGL	96.4	(85-115)	0.42
MBLK	Perchlorate	ND	<4.00	UGL			
MS	Perchlorate	25.0	24.8	UGL	99.2	(80-120)	
MSD	Perchlorate	25.0	24.8	UGL	99.2	(80-120)	0.00

QC Ref #183664 Alkalinity in CaCO3 units

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 22	10180004	MGL		(0-0)	
LCS1	Alkalinity in CaCO3 units	100	99.8	MGL	99.8	(90-110)	
LCS2	Alkalinity in CaCO3 units	100	104	MGL	104.0	(90-110)	4.1

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.

MWH Laboratories
MONTGOMERY WATSON HARZA

555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400
Fax: 626 568 6324
1 800 568 LABS (1 800 568 5227)

Laboratory
QC Report
#101920

Foster Wheeler Environ. Inc.
(continued)

MBLK	Alkalinity in CaCO3 units	ND	<1.00	MGL			
MS	Alkalinity in CaCO3 units	96.2	93.2	MGL	96.9	(80-120)	
MSD	Alkalinity in CaCO3 units	96.2	95.5	MGL	99.3	(80-120)	2.4
RPD_LCS	Alkalinity in CaCO3 units	99.800	104.000	MGL	4.1	(0-10)	
RPD_MS	Alkalinity in CaCO3 units	96.881	99.272	MGL	2.4	(0-10)	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining. Criteria for MS and DUP are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.